

Water Information System – General Overview

The Montana State Library maintains a Water Information System to provide information about the state's water resources available to interested parties. The water information system itself is a set of web sites built to aid in the discovery of water information at the library as well as from a variety of partner agencies including state and federal government agencies, watershed groups, and other data partners. In addition to maintenance of the water information system web site, the library acts as Montana's steward of the National Hydrography Data. To that end, the library has staff members trained and qualified to edit and otherwise update the Montana Hydrography Dataset and works through the Montana Hydrography Work Group to prioritize the development of that dataset.

In recent years, the library has been approached by partners in a number of different forums about a more aggressive effort to update the state's Hydrography. Based on these conversations, MSL made a budget request for a Water Information System Manager who could focus on the task of developing this dataset in a manner that is usable by all interested parties. The 2103 legislature provided funding for an FTE to perform the role of Water Information System Manager.

Currently, the library is focused on filling the Water Information System Manager position as quickly as possible and getting that position started on the work tasks identified by MSL partner agencies, presented before the budget subcommittee, and now available to members of the Water Policy Interim Committee in the packet provided today.

Water Information System Website

<http://nriss.mt.gov/wi.asp>

2011 WPIC Status Update

[http://apps.msl.mt.gov/About the Library/Commission Councils/NRIS Advisory Committee/publications/2011 WPIC WIS.ppt](http://apps.msl.mt.gov/About%20the%20Library/Commission%20Councils/NRIS%20Advisory%20Committee/publications/2011%20WPIC%20WIS.ppt)

90-15-301. Establishment of information system. (1) The library, in consultation with the committee, shall establish a planning framework for the implementation of a natural resource information system and shall begin implementation of the plan. This system is to be a comprehensive program for the acquisition, storage, and retrieval of existing data relating to the natural resources of Montana.

(2) The library shall give attention to the factors listed in 90-15-201 and shall prepare any legislation necessary to implement the system.

(3) It is not intended that the system shall require fieldwork to produce data. The system is intended to facilitate the management of data collected by state agencies in the normal course of their operations.

90-15-305. Water information system. (1) There is a Montana water information system, to be operated within the natural resource information system referred to in 90-15-301 and that is to be considered a part of the system.

(2) The Montana water information system shall make available and readily accessible, in a usable format, to state agencies and other interested persons, information on the state's water resources, out-of-state water resources that affect the state, existing and potential uses, and the existing and potential demand.

WATER POLICY INTERIM
COMMITTEE. 2013-14

State Agency Hydrography Dataset Uses & Stewardship Needs

National Hydrography Dataset Uses

Item (existing or potential)	Statute & Rules (MCA, ARM, USC, CFR)	Class	Scale	Agency
State Water Plan / Planning	MCA 85-1-203	Product / Use	1:24	DNRC
Water Quality Integrated Reporting (Assessment Units)	MCA 75-5-702 33 U.S.C. 1314 & 1315 40 CFR 130.8	Event Table / Feature Class	1:24	DEQ
Water Quality Monitoring Locations	MCA 75-5-702 40 CFR 130.4	Event Table / Feature Class	1:24	DEQ
Water Quality Reference Site	MCA 75-5-702 40 CFR 130.4	Event Table / Feature Class	1:24	DEQ
State Water Use Classification (Water Quality Standards)	MCA 75-5-301 ARM 17.30.600 et seq. 33 U.S.C. 1314 40 CFR 130.3 & 131.4	Event Table / Feature Class	1:24	DEQ
MPDES Permit Outfalls	MCA 75-5-703	Event Table / Feature Class	1:24	DEQ
Species Occurrence Mapping	MCA 90-15-102	Event Table / Feature Class	1:24	NHP, MDT
Wetland Mapping	MCA 90-15-102	Event Table / Feature Class	1:24	NHP, MDT; DEQ
Lotic Aquatic Ecological Systems Mapping	MCA 90-15-102	Event Table / Feature Class	1:24	NHP
Floodplain Mapping	MCA 76-5-Part 2	Event Table / Feature Class	1:24	MDT; DEQ; DNRC; FWP, Commerce
Fish Distribution / Occurrence / Presence		Event Table / Feature Class	1:24	FWP*
Wildlife Distribution / Occurrence / Presence		Event Table / Feature Class	1:24	FWP*
Dewatering Status		Event Table / Feature Class	1:24	FWP*
Minimum Instream Flow		Event Table / Feature Class	1:24	FWP*
Survey site locations		Event Table / Feature Class	1:24	FWP*
Fisheries telemetry work (need network)		Event Table / Feature Class	1:24	FWP*
Fishing regulations		Event Table / Feature Class	1:24	FWP*
Stream Access	MCA 23-2-Part 3	Event Table / Feature Class	1:24	FWP*
Display of instream barriers		Event Table / Feature Class	1:24	FWP*

State Agency Hydrography Dataset Uses & Stewardship Needs

Item (existing or potential)	Statute & Rules (MCA, ARM, USC, CFR)	Class	Scale	Agency
Chronically Dewater Watercourse - Identification	MCA 85-2-150 ARM 36.13.102	Event Table / Feature Class	1:24	DNRC; FWP*
Public Ways (Water)	MCA 85-1-111	Event Table / Feature Class	1:24	DNRC, MDT
Navigable Waters	MCA 85-1-112	Event Table / Feature Class	1:24	DEQ; DNRC, MDT
Water Rights – Appropriations, Permits, and Certificates of Water Rights	MCA 85-2-Part 3 ARM: ~36.12.101 to 36.12.2001	Event Table / Feature Class	1:24	DNRC; FWP*
Indian and Federal Reserved Water Rights	MCA 85-2-Part 7	Event Table / Feature Class	1:24	DNRC; Others
Aquatic Invasive Species	MCA 80-7-Part 10 ARM 12.5.701-703	Event Table / Feature Class	1:24	DNRC; FWP*; AGR
Water Quality Assessment (beneficial use support/attainment)	MCA 75-5-703 40 CFR 130.6 & 130.7	Use	1:24	DEQ
Water Quality Restoration – TMDL	MCA 75-5-703 ARM 17.30. USC 40 CFR 130.6 & 130.7	Use	1:24	DEQ
Watershed / Water Quality Modeling	MCA 75-5-703 40 CFR 130.7	Use	1:24	DEQ; DNRC; FWP*
Highway maintenance & construction		Use	1:24	MDT
Forestry – Streamside Management	MCA 77-5-Part 3 ARM 36.11.301-313	Use	1:24	DNRC
Drought Advisory Committee	MCA 2-15-3308	Use	1:24	DNRC
Water Rights - Adjudication	MCA 85-2-Part 2	Use	1:24	DNRC
Water Rights – Temporary Changes	MCA 85-2-407 ARM: ~36.12.1801 to 36.12.1904	Use	1:24	DNRC
Water Rights - Enforcement		Use	1:24	DNRC
Water Rights - Water Commissioners		Use	1:24	DNRC
State Reservation of Waters	MCA 85-2-316 ARM: 36.12.101 36.16.101	Use	1:24	DNRC
Indian and Federal Reserved Water Rights	MCA 85-2-Part 7	Use	1:24	DNRC
Dam Safety Act	MCA 85-15-210 ARM: ~36.14.101 to 36.14.803	Use	1:24	DNRC

State Agency Hydrography Dataset Uses & Stewardship Needs

Item (existing or potential)	Statute & Rules (MCA, ARM, USC, CFR)	Class	Scale	Agency
Major Facilities Siting Studies	MCA 75-20-101 et seq.	Use	1:24	DEQ
Environmental Impact Statements	MCA 75-1-201 et seq. ARM 17.4.600 et seq. 42 USC § 4321 et seq. 40 CFR 1502	Use	1:24	DEQ
Coal mine permitting & reclamation plan development	MCA 82-4-205 ARM 17.24.304 ARM 17.24.314 ARM 17.24.634	Use	1:24	DEQ
Land acquisitions (riparian habitat and recreational opportunities)		Use	1:24	FWP*
Energy facility siting (oil & gas)		Use	1:24	FWP*
Landscape and Ecosystem Assessment and Modeling		Use	1:24	NHP

*All FWP use of the 24K is dependent on the presence and maintenance of a whole stream identifier

National Hydrography Dataset Stewardship Needs from MSL/NRIS WIS Manager

NHD Issues, Concerns, Needs	Scale	State Agency
Water names Geographic Names Information System (GNIS)	1:24	All
Feature Type editing (flow line, points, area)	1:24	All
2D / Multichannel streams	1:24	All
Border harmonizations	1:24	All, LCC; StreamStats; Northern Sagebrush Steppe Initiative; Energy; Western Governors' Association Crucial Habitat Analysis Tools (CHAT)
Whole stream identifier (LLID relate)	1:24	FWP, MDT, DEQ
100-yr floodplain	1:24	MDT; DEQ; Commerce; DNRC; others?
Wetlands	1:24	NHP; MDT; DEQ; DNRC; FWP; others?
Networking capabilities	1:24	FWP; others?
Stream Order	1:24	MDT, DEQ

Water Information System Manager – Biennium Goals and related tasks

Overall goals for the Water Information System Manager position:

1. Coordinate efforts to improve hydrographic data and provide support to Water Information users throughout Montana with the goal of identifying opportunities to collaborate in order to make high quality water information available to all Montanans as efficiently and affordably as possible.
2. Manage the Montana Hydrography Dataset as a statewide water information reference dataset for Montana state agencies with the goal of providing a high quality state wide dataset available for use by state, local, and private interests as the best available hydrography data in the state.
3. Manage and maintain the Montana Water Information System web site as a discovery hub for Montanans to discover information about water in the state. This will include access to the Montana Hydrography dataset for use by GIS professionals as well as access to tools for the general public to access and visualize a broad range of water related information indexed to the Montana Hydrography Dataset.

Priorities for the FY14-15 Biennium to demonstrate the value of this position to the Executive and Legislature. These are tasks to be included in the Hydrography work plan with a scheduled completion date of June 30, 2015. Reports on the status of these projects will be provided to the Montana Hydrography Workgroup, the NRIS Advisory Committee, and/or the Water Policy Interim Committee.

1. Coordinate and staff the Montana Hydrography Work Group
Measurable – Regular communication among the members of the Montana Hydrography Work Group

Metric – Quarterly in face work group meetings

Metric - Monthly communication with work group members through meetings, email, a newsletter or a video or traditional call.

2. Improve the quality of the features in the Montana Hydrography Dataset

Measurable – Outline and implement a process for updating the flowline and water body features for NW Montana (Clark Fork drainage) or another area identified as high priority by the Montana Hydrography Work Group.

Metric – All flowline and waterbody features in the area identified are aligned with data no older than the 2005 NAIP Imagery. Feature names will also be corrected during this process.

Measureable – Determine NHD Features of value to Montana partner agencies.

Metric – A published list of hydrographic feature types supported in the Montana Hydrography dataset.

3. Develop a transparent workflow for editing/maintaining the NHD within the state

Measurable – Work with the Hydrography workgroup including representation from the Montana State Library (MSL), Department of Natural Resources and Conservation (DNRC), Department of Environmental Quality (DEQ), and Fish Wildlife and Parks (FWP) to develop a workflow that meets agency business needs.

Metric – Workflow and workflow maintenance schedules are published to the Montana Hydrography Workgroup web site.

Measurable – Provide training resources (in person and web based) to ensure agency water professionals that may work with the Hydrography dataset understand and are able to use the defined workflow.

Metric – Offer at least three training sessions (1 each for DEQ, DNRC, and FWP)

4. Develop a versioning model to buffer state business processes from interruption to changes in the base data.

Measurable – Work with the Hydrography workgroup, including representation from MSL, DNRC, DEQ, and FWP to develop a versioning model that meets agency business needs.

Metric – The versioning model is published to the Montana Hydrography Workgroup web site.

5. Work with partner agencies to determine if there is a long term need for a dedicated Water Information System Manager.

Measurable – Work with the DNRC, DEQ, and FWP to identify and document ongoing maintenance needs for the Montana Hydrography beyond the FY14-15 biennium.

Metric – Produce a report for the Water Policy Interim Committee outlining the Montana Hydrography Dataset maintenance needs that includes a recommendation for how those needs could be met.